



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/783,057

02/20/2004

Tadayuki Fujiwara

NGB-15369

6775

40854 7590 09/26/2008

RANKIN, HILL & CLARK LLP

38210 Glenn Avenue

WILLOUGHBY, OH 44094-7808

EXAMINER

SUGLO, JANET L

ART UNIT

PAPER NUMBER

2857

MAIL DATE

DELIVERY MODE

09/26/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/783,057	Applicant(s) FUJIWARA ET AL.	
	Examiner JANET L. SUGLO	Art Unit 2857	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 September 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5,7,8,10 and 11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5,7,8,10 and 11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on September 4, 2008 has been entered.

Response to Amendment

2. The action is responsive to the Amendment filed on September 4, 2008. Claims 1-5, 7, 8, 10 and 11 are pending. Claims 1, 4 and 8 have been amended. Claims 6 and 9 have been cancelled.

3. The amendments filed September 4, 2008 are sufficient to overcome the prior objection to claim 8 and 35 U.S.C. 112, second paragraph, rejection of claims 1-11.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 2857

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claims 1, 4, 7 and 10** are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. (US Patent 6,473,664) (hereinafter "Lee") in view of Dow et al. (US Patent 5,351,247) (hereinafter "Dow").

With respect to **claim 1**, Lee teaches an apparatus for managing a liquid crystal substrate (Lee: col 1, ln 10-12) comprising:

a liquid crystal testing device operable to determine whether at least one of a panel (Lee: col 11, ln 42) and a substrate (Lee: col 3, ln 1-2) in the liquid crystal substrate has a defect (Lee: col 7, ln 47-55), and acquire defect information indicative of at least the defect and whether the at least one of the panel and the substrate is defective (Lee: col 3, ln 41-52; col 9, ln 55-65);

a liquid crystal repair device operable to repair the defect based on the defect information (Lee: col 5, ln 46-55; col 7, ln 47-55), and acquire repair information that is indicative of whether the defect is actually repaired (Lee: Figures 4 and 5; col 5, ln 51-55; col 6, ln 5-21; col 7, ln 47-55); and

a data management section having a database adapted to record the defect information which is acquired from the liquid crystal testing device (Lee: e.g., Host, File Server) (Lee: Figure 4: 100, 110; col 9, ln 55-65), and the repair information (Lee: col 5, ln 50-55) which is acquired from the liquid crystal repair device (Lee: col 5, ln 50-55), wherein

Art Unit: 2857

said data management section is operable to redetermine the presence of the defect based on the defect information (Lee: col 10, ln 1-16) and the repair information which are recorded in said database (Lee: Figure 4: 100, 110; Figure 5; col 2, ln 44-58; col 5, ln 50-55, col 7, ln 46-55; col 9, ln 55-65. Lee states in the previous passages that each machine shares the job result data of the previous machine. As he describes the second machine as a repair machine, the repair information is being passed to the second machine to be manipulated again.),

said liquid crystal repair device is operable to correct the defect information to generate corrected defect information when the defect indicated by the defect information is different from the defect indicated by the repair information (Lee: Each process causes both raw data and summary data to be saved; col 5, ln 46-59; col 6, ln 42-48; col 8, ln 51 – col 9, ln 10); and

said data management section is operable to update the defect information recorded in said database with the corrected defect information (Lee: col 5, ln 51-59; col 6, ln 42-48; col 8, ln 115-19; col 8, ln 51 – col 9, ln 10; col 9, ln 55-65).

Lee does not explicitly teach redetermining the presence of the defect based on comparison between the defect information and the repair information. Dow teaches redetermining the presence of the defect based on comparison between the defect information and the repair information which are recorded in said database (Dow: col 1, ln 17-18; col 8, ln 53 – col 9, ln 6). Dow further teaches correct the defect information to generate corrected defect information when the defect indicated by the defect information is different from the defect indicated by the repair information and said data

Art Unit: 2857

management section is operable to update the defect information recorded in said database with the corrected defect information (Dow: col 8, ln 6-68; col 11, ln 8-19). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Lee to include the comparison of Dow because it will more accurately determine faults and proper repair procedures (Dow: col 3, ln 11-21).

With respect to **claim 4**, Lee teaches a method for managing a liquid crystal substrate (Lee: col 1, ln 10-12) comprising:

determining whether at least one of a panel (Lee: col 11, ln 42) and a substrate (Lee: col 3, ln 1-2) in the liquid crystal substrate has a defect (Lee: col 7, ln 47-55), and acquire defect information indicative of at least the defect and whether the at least one of the panel and the substrate is defective (Lee: col 3, ln 41-52; col 9, ln 55-65);

repairing the defect based on the defect information (Lee: col 5, ln 46-55; col 7, ln 47-55), and acquires repair information indicative of at least a position that is actually repaired (Lee: Figures 4 and 5; col 6, ln 5-21; col 7, ln 47-55);

recording, in a database, the defect information which is acquired from the liquid crystal testing device (Lee: Figure 4: 100, 110; col 9, ln 55-65), and the repair information (col 5, ln 50-55) which is acquired from the liquid crystal repair device (Lee: col 5, ln 50-55);

redetermining the presence of the defect based on the defect information (Lee: col 10, ln 1-16) and the repair information which are recorded in said database (Lee: Figure 4: 100, 110; Figure 5; col 2, ln 44-58; col 5, ln 50-55, col 7, ln 46-55; col 9, ln 55-

Art Unit: 2857

65. Lee states in the previous passages that each machine shares the job result data of the previous machine. As he describes the second machine as a repair machine, the repair information is being passed to the second machine to be manipulated again.),

correcting defect information to generate corrected information when the defect indicated by the defect information is different from the defect indicated by the repair information with regard to the defect (Lee: Each process causes both raw data and summary data to be saved; col 5, ln 51-59; col 6, ln 42-48; col 8, ln 51 – col 9, ln 10); and

updating the defect information recorded in said database with the corrected defect information (Lee: col 5, ln 51-59; col 6, ln 42-48; col 8, ln 51 – col 9, ln 10; col 9, ln 55-65).

Lee does not explicitly teach redetermining the presence of the defect based on comparison between the defect information and the repair information. Dow teaches redetermining the presence of the defect based on comparison between the defect information and the repair information which are recorded in said database (Dow: col 1, ln 17-18; col 8, ln 53 – col 9, ln 6). Dow further teaches correcting the defect information to generate corrected defect information when the defect indicated by the defect information is different from the defect indicated by the repair information and updating the defect information recorded in said database with the corrected defect information (Dow: col 8, ln 6-68; col 11, ln 8-19). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Lee to include the

Art Unit: 2857

comparison of Dow because it will more accurately determine faults and proper repair procedures (Dow: col 3, ln 11-21).

With respect to **claim 7**, Lee teaches the repair information includes image information of a part of the at least one of the panel and the substrate that is actually repaired (Lee: col 5, ln 18-28; col 6, ln 43-47).

With respect to **claim 10**, Lee teaches the repair information includes image information of a part of the at least one of the panel and the substrate that is actually repaired (Lee: col 5, ln 18-28; col 6, ln 43-47).

6. **Claims 2, 3 and 5** are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee in view of Dow and further in view of Miura et al. (US Patent 6,282,457) (hereinafter "Miura").

With respect to **claim 2**, Lee further teaches said data management section stores a recipe information for defining specifications of the substrate and panel in said database (Lee: col 8, ln 64 - col 9, ln 6). Lee further teaches that the user inputs necessary data when data is processed abnormally (Lee: col 10, ln 17-20). Lee and Dow do not specify that said recipe information is edited freely. Miura teaches a method and apparatus for processing liquid crystal panel substrates (Miura: col 13, ln 20-22) including adjusting or finely modifying the recipes. It would have been obvious to

Art Unit: 2857

one of ordinary skill in the art at the time of the invention to modify Lee and Dow to include the recipe modifications of Miura because this ensures an optimal exposure recipe resulting in more efficient processing (Miura: col 2, ln 59-62; col 12, ln 46-47).

With respect to **claim 3**, Lee further teaches a terminal connected to the data management system where a user can input information (Lee: col 10, ln 17-20). Lee and Dow do not teach that the data management section edits the recipe information by exchange of information with the terminal. Miura teaches a method and apparatus for processing liquid crystal panel substrates (Miura: col 13, ln 20-22) including adjusting or finely modifying the recipes. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Lee and Dow to include the recipe modifications of Miura because this ensures an optimal exposure recipe resulting in more efficient processing (Miura: col 2, ln 59-62; col 12, ln 46-47).

With respect to **claim 5**, Lee further teaches recording a recipe information acquired from the liquid crystal testing device in the database, the recipe information defining specifications of the substrate and panel (Lee: col 8, ln 64 - col 9, ln 6). Lee further teaches that the user inputs necessary data when data is processed abnormally (Lee: col 10, ln 17-20). Lee and Dow do not specify that said recipe information is edited freely. Miura teaches a method and apparatus for processing liquid crystal panel substrates (Miura: col 13, ln 20-22) including adjusting or finely modifying the recipes. It would have been obvious to one of ordinary skill in the art at the time of the invention to

Art Unit: 2857

modify Lee and Dow to include the recipe modifications of Miura because this ensures an optimal exposure recipe resulting in more efficient processing (Miura: col 2, ln 59-62; col 12, ln 46-47).

7. **Claims 8 and 11** are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee in view of Dow and further in view of Hiroi et al. (US PGPub 2003/0063792) (hereinafter "Hiroi").

With respect to **claim 8**, Lee and Dow teach all limitations of parent claim 1 and Lee further teaches that various statistical processes are carried out on the raw and summary data of the liquid crystal substrates (Lee: col 6, ln 39-41; col 7, ln 30-34; col 11, ln 20-24; col 11, ln 50-54) with respect to the defect information and the repair information (Lee: col 5, ln 46-55; col 6, ln 40-47; col 7, ln 46-55; col 11, ln 48-54). Lee and Dow do not explicitly teach acquiring trend information for defects of a plurality of liquid crystal substrates. Hiroi teaches acquiring trend information for defects of a plurality of liquid crystal substrates (Hiroi: Abstract; Figure 5; [0013], [0019], [0034]). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Lee and Dow to include the trend analysis of Hiroi because trend data allows defect analysis to be utilized effectively and thereby saving processing time and money (Hiroi: [0034]).

Art Unit: 2857

With respect to **claim 11**, Lee and Dow teach all limitations of parent claim 4 and Lee further teaches that various statistical processes are carried out on the raw and summary data of the liquid crystal substrates (Lee: col 6, ln 39-41; col 7, ln 30-34; col 11, ln 20-24; col 11, ln 50-54) with respect to the defect information and the repair information (Lee: col 5, ln 46-55; col 6, ln 40-47; col 7, ln 46-55; col 11, ln 48-54). Lee and Dow do not explicitly teach acquiring trend information for defects of a plurality of liquid crystal substrates. Hiroi teaches acquiring trend information for defects of a plurality of liquid crystal substrates (Hiroi: Abstract; Figure 5; [0013], [0019], [0034]). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Lee and Dow to include the trend analysis of Hiroi because trend data allows defect analysis to be utilized effectively and thereby saving processing time and money (Hiroi: [0034]).

Response to Arguments

8. Applicant's arguments with respect to claims 1-5, 7, 8, 10 and 11 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Baker et al. (US Patent 4,847,795) teaches a system for diagnosing defects in electronic assemblies. A knowledge base is updated based upon

Art Unit: 2857

information regarding whether the recommended repair procedure eliminated the defect (Baker: Abstract; col 2, ln 5-17). Baker et al. further teaches retesting the failed assembly after repair and re-diagnoses the assembly updating knowledge base based upon results (Baker: col 8, ln 36 – col 9, ln 30).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JANET L. SUGLO whose telephone number is (571)272-8584. The examiner can normally be reached on M-Th from 7:30am - 6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eliseo Ramos-Feliciano can be reached on 571-272-7925. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2857

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JANET L SUGLO/
Examiner, Art Unit 2857

/Tung S. Lau/
Tung S. Lau, Art Unit 2863
Primary Examiner
September 24, 2008